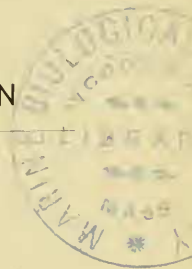


PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTON



NOTES ON A COLLECTION OF ALGÆ FROM
GUATEMALA.

BY JOSEPHINE E. TILDEN.

While engaged in collecting plants, more particularly rusts, in the neighborhood of Lakes Amatitlan and Atitlan, Guatemala, Dr. W. A. Kellerman and Mr. A. L. Smith, both of the Ohio State University, made a collection of algae which was sent to me for study. The following list of species is the result of my work.

MYXOPHYCOEÆ.

Microcystis flos-aquæ.

Microcystis flos-aquæ (Wittr.). Kirchn. in Engler and Prantl, Nat. Pflanz. 1, 1a. 56, f. 49 N. 1900.

Cells 4-6.5 mic. in diameter, globose, densely aggregated to form solid or clathrate, oblong or elliptical colonies; colonies up to 175 mic. long. Associated with *Anabana flos-aquæ* and *Eudorina elegans*. Lake Amatitlan. Temperature of water 73°. "Very abundant." Collected with a surface net. W. A. Kellerman (no. 5034), S. E. Meek, and A. L. Smith, January 14, 1906.

Oscillatoria boryana.

Oscillatoria boryana Bory., Diet. 12:465. 1827.

Stratum dark chalybeous; plants forming a regular spiral through their entire length, flexible, slightly constricted at joints, 6-8 mic. in diameter, with an acute, non-capitate apex; cells 4-6 mic. long, showing a few scattered granules; cross walls granular; apical cell rounded or acute-conical; calyptra none. Forming a dark velvety mass in a small stream of warm water, a little distance from a hot spring, on bank of river. Altitude 3,950 feet. Rio Michatoya, near Lake Amatitlan. W. A. Kellerman (no. 5051), January 25, 1906.

Phormidium valderianum.

Phormidium valderianum (Delp.). Gomont, Monogr. des Oscill. in Ann. Sci. Nat. Bot. VII, 16: 167. pl. 4. f. 20. 1892.

Stratum slimy, expanded, lamellose, 8 mm. thick, the upper layers dull green, the internal layers whitish; trichomes aeruginous, straight, not attenuate at apex, not constricted at joints, 2-2.5 mic. in diameter; cells somewhat longer than the diameter, 3.3-6.7 mic. long; apical cell rotund; calyptra none. Associated with *Nodularia harreyana*. Laguna, Lake Amatitlan. Altitude 3,950 feet. W. A. Kellerman (no. 4304), February 8, 1905.

Phormidium laminosum.

Phormidium laminosum (Ag.) Gomont, in Journ. de Bot. 4:355. 1890.

Stratum forming a dark-colored or reddish, firm crust; plants flexuose, densely intermingled; sheath narrow, more or less distinct; trichomes pale bluish-green, not constricted at the joints, with straight, briefly attenuated, non-capitate apex, 1-1.5 mic. in diameter; cross walls not visible. Near Lake Amatitlan. In a pool of very warm water close to a hot spring. W. A. Kellerman (no. 5053), January 25, 1906.

Phormidium uncinatum.

Phormidium uncinatum (Ag.) Gomont, in Journ. de Bot. 4:355. 1890.

Stratum widely expanded; plants straight or somewhat flexuous; sheath not distinct; trichomes aeruginous, not constricted at the joints, 6-9 mic. in diameter, briefly attenuated at the apex, capitate, curved or briefly spiral; cells 2-3 times shorter than the diameter, 2-6 mic. long; cross walls frequently lined with granules; apical cell having a rotund calyptra. Lake Amatitlan. On rocks at the edge of lake and also on *dry* rocks, same locality. W. A. Kellerman (nos. 5063 and 5067), January 28, 1906.

Lyngbya martensiana.

Lyngbya martensiana Menegh., Conspectus Algol. euganeæ. 12. 1837.

Plants elongate, somewhat flexuous, flexible; sheath hyaline; trichomes pale blue-green (violet in dried material), not constricted at the joints, with non-attenuate apex, 6-10 mic. thick; cells shorter than the diameter, 1.7-3.3 mic. long; cross walls visible; apical cell rotund; calyptra none. On stems of *Scirpus*, dead or dying. Lake Amatitlan. W. A. Kellerman (no. 5061), January 28, 1906.

Lyngbya lagerheimii.

Lyngbya lagerheimii (Moeb.) Gomont, Journ. de Bot. 4:354. 1890.

Plants more or less regularly spiral or straight; sheath thin, hyaline; trichomes about 2 mic. in diameter; cells shorter or longer than the diameter, 1.2-3 mic. long; cross walls marked by two refringent granules (not visible in the preserved specimens). On stems and on lower branches of a tree which had been cut off and thrown into water. Lake Amatitlan. W. A. Kellerman (no. 5068), January 30, 1906.

Nodularia harveyana.

Nodularia harveyana (Thwaites) Thuret, Ann. Sci. Nat. Bot. VI, 1: 378. 1875.

Plants slender, 4-5 mic. in diameter, attenuate at ends, terminated by an obtusely conical cell; sheath extremely delicate, hyaline, distinct; cells before division equal to or a little longer than diameter; heterocysts subquadrate, somewhat longer than wide, of the same width as the cells; gonidia somewhat globose, yellowish-dark-colored (in this material bright aruginous, probably immature), 5-8 mic. in diameter. Associated with *Phormidium valderianum*. Laguna, Lake Amatitlan; altitude 3,950 feet. W. A. Kellerman (no. 4304), February 8, 1905.

Anabaena flos-aquæ.

Anabaena flos-aquæ (Lyngb.) Bréb. in Brébisson & Gody, Algues des environs de Falaise, 36. 1835.

Colonies frothy, gelatinous, floating; plants circinate, 4-8 mic. in diameter; cells spherical-compressed, 6-8 mic. in length; heterocysts a little larger than ordinary cells; gonidia curved, oblique, 7-13 mic. in diameter, 20-35 mic. long, near the heterocyst. Associated with *Microcystis flos-aquæ* and *Eudorina elegans*. Lake Amatitlan. Temperature of water 73°. "Very abundant." Collected with a surface net. W. A. Kellerman (no. 5034) S. E. Meek, and A. L. Smith, January 14, 1906.

Stigonema ocellatum.

Stigonema ocellatum (Dillw.) Thur. Ann. Sci. Nat. Bot. VI, 1: 380. 1875.

Cespitose, pannose, tomentose, dark-colored; plants erect, 3-8 mm. high, irregularly branched; branches long, straight, patent, scarcely more slender than primary filaments, 35-45 mic. in diameter; sheath thick, lamellose, hyaline or yellowish; cells of varied sizes, in one or two rows, bluish-green, 20-30 mic. in diameter; heterocysts rare, lateral. Growing on edges of steam-holes on side of Volcano Santa Maria, near Lake Atitlan. W. A. Kellerman. (no. 5070), February 3, 1906.

CHLOROPHYCEÆ.

Spirogyra sp.

Spirogyra sp.; sterile.

In pool near river. Rio Michatoya. W. A. Kellerman (no. 5050) January 25, 1906.

Spyrogira sp.; sterile.

In still water. Lake Amatitlan, south end. W. A. Kellerman (no. 5062) January 28, 1906.

Pleurococcus vulgaris.

Pleurococcus vulgaris Menegh. Nostoch. 38. no. 6. pl. 5. 1846.

On cedar planks at edge of lake. Lake Amatitlan. W. A. Kellerman (no. 5066), February 1, 1906.

Eudorina elegans.

Eudorina elegans Ehrenb. in Monatsb. der Akad. d. Wissensch. zu Berlin. 78, 152, pl. 2, f. 10, 1831.

Associated with *Microcystis flos-aquæ* and *Anabæna flos-aquæ*. Lake Amatitlan. Temperature of water 73°. "Very abundant." Collected with a surface net. W. A. Kellerman (no. 5034), S. E. Meek and A. L. Smith, January 14, 1906.

Chaetophora sp.

Chaetophora sp.

Colonies very small, bright green, soft, flat, confluent; filaments radiating from the center, dichotomously branched, erect and subparallel, not fasciculate at summit; terminal branches finely pointed, not setiferous; cells of main filament 5-6 mic. wide, 4-5 times as long. On old twigs and stems of woody plants which had been thrown in the water in a sheltered place. Lake Amatitlan. W. A. Kellerman (no. 5069), June 30, 1906. This material is in a young condition, somewhat abnormal, and softened by formalin.

Melosira granulata.

Melosira granulata (Ehr.) Ralfs in Pritch. Inf. 820, 1861.

In bottom of river with very swift current. Two feet deep. Rio Michatoya, one-half mile from Lake Amatitlan of which this river is an outlet, Altitude 3,950 feet. W. A. Kellerman (no. 5054), January 26, 1906.

? **Batrachospermum** sp.

? *Batrachospermum* (*Chantransia* stage).

Cells of main filament 13 mic. wide, 37-65 mic. long. No reproductive cells present. Associated with *Lyngbya lagerheimii*. On stems and on lower branches of trees in water. Lake Amatitlan. W. A. Kellerman (no. 5068), January 30, 1906.